

**JP62058222A**  
**MATRIX TYPE DISPLAY DEVICE**  
RICOH CO LTD

**Inventor(s):** ; UEHARA KIYOHIRO ; SUZUKI TAKUMI ; TAKIGUCHI YASUYUKI  
**Application No.** 60197565, **Filed** 19850909, **Published** 19870313

**Abstract:** PURPOSE: To improve reliability by disposing substrates formed by embedding metallic wire electrodes into plastic films so as to partly project said electrodes to face each other in such a manner that the metallic wire electrodes are positioned like a matrix and packing a liquid crystal of which the optical properties change with heat between such substrates.

CONSTITUTION: The lower substrate 23 formed with the Y-axis direction electrodes 21 in a stripe shape and the upper substrate 27 formed with the X-axis direction electrodes 25 in a stripe shape are disposed to face each other. The liquid crystal 31 is packed between the substrates 23 and 27. The liquid crystal 31 formed by mixing a cholesteric liquid crystal which is made microcapsule with a binder to form liquid crystal ink and printing such ink is used. A driving signal is scanned to the X-axis direction electrodes and the Y-axis direction electrodes and voltage is impressed between the X-axis direction electrodes and the Y-axis direction electrode at the cross point desired to be lighted. Current is passed to the liquid crystal in the display dot part to generate heat. The pitch of the cholesteric liquid crystal is changed by such heating, by which coloration (color change) is induced.

COPYRIGHT: (C)1987,JPO&Japio

**Int'l Class:** G02F001133 G02F001133 G09F00935

**MicroPatent Reference Number:** 000109999  
COPYRIGHT: (C)JPO

---